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Testimony of the National Association of Flood and Stormwater Management Agencies

Presented by Ben Urbonas
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for the Hearing on
West Nile Virus:
the Clean Water Act and Mosquito Control

U.S. House of Representatives
Transportation and Infrastructure Committee
Water Resources and Environment Subcommittee

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Chairman Duncan and members of the Subcommittee, I am Ben Urbonas, of the Urban Drainage and Flood Control District, Denver, Colorado. I appreciate the opportunity to testify before you today on behalf of The National Association of Flood and Stormwater Management Agencies on an issue of importance to the NAFSMA membership.

Background on NAFSMA

Founded in 1979, NAFSMA represents more than 100 local and state flood control and stormwater management agencies serving a total of more than 76 million citizens and has a strong interest in this important issue. NAFSMA's membership also includes a large number of consulting firms with strong technical expertise in stormwater and flood management.

NAFSMA's public agencies functions are the protection of lives, property and economic activity from the adverse impacts of storm and flood waters. NAFSMA member activities are also focused on the improvement of the health and quality of our nation's waters as directed by the EPA in their various programs including the National Pollutant Discharge Elimination System (NPDES). Towards that end NAFSMA members plan and implement stormwater management projects and offset the environmental impacts resulting from our work in accordance with local, state and federal environmental requirements.

The mission of the association is to advocate public policy, encourage technologies and conduct education programs to facilitate and enhance the achievement of the public service functions of its members. Many of NAFSMA's members are currently involved in implementation of stormwater Best Management Practices (BMPs) and in meeting the requirements of Phases One and Two of the NPDES stormwater regulatory program.

Since the late 1980's NAFSMA has worked closely with Congress and the Environmental Protection Agency on issues critical to the development and management of the National Pollutant Discharge Elimination System Stormwater Program. NAFSMA representatives served on the Federal Advisory Committee (FACA) on the upcoming Stormwater Phase II program, which will bring thousands of smaller communities under the NPDES stormwater umbrella beginning in March 2003, and on the Urban Wet Weather FACA.

We are proud of the commitment of our member agencies to protect and restore the environment while protecting their constituents from the ravages of floods and unmanaged storm waters in urban areas.

Background on the Urban Drainage and Flood Control District

The Urban Drainage and Flood Control District was established by the Colorado legislature in 1969, for the purpose of assisting local governments in the Denver metropolitan area with

multi-jurisdictional drainage and flood control. The District covers an area of 1608 square miles and includes the City and County of Denver, parts of six surrounding counties, including Adams, Arapahoe, Boulder, Broomfield, Douglas and Jefferson, and all or parts of 33 incorporated cities and towns. There are about 1600 miles of major drainageways within the District. The present population of the District is approximately 2.3 million people.

Data on Structural Best Management Practices and Their Effectiveness

My own background includes over 40 years of practice as a Civil Engineer; the last 26 years with the District. Much of my effort with the District has been focused on technology development to find better and more cost effective ways in the fields of flood control and stormwater management. The last five years I have been serving as one of the three Principal Investigators to develop a National Stormwater BMP Database, an effort funded by the Environmental Protection Agency through a grant to the American Society of Civil Engineers. For the first time, we now have a technically sound repository for data collected on the effectiveness of stormwater BMPs by anyone in the world, one that is based on sound technology and science in this field. Once extensively populated, it will provide the information needed for consistent evaluation of the effectiveness of various BMP designs and how they relate to local or regional receiving water protection needs.

NAFSMA members appreciate the concern expressed by this committee and by others about potential linkages between structural BMPs implemented as part of the stormwater program requirements and their potential linkages to mosquito borne diseases. We understand that these are serious issues and we appreciate the commitment of this subcommittee to gather information on this potential problem.

NAFSMA members have been addressing this issue in many ways and in varying degrees throughout the country.

The most important and first step undertaken by our agencies is to carefully develop the technology for the design of stormwater detention systems and other structural BMPs that will limit the extent of this problem as much as possible from the start. Secondly, maintenance procedures must be designed and implemented to ensure that vector control is maintained at effective levels.

These approaches can go far in minimizing potential mosquito breeding problems that could be caused by improperly designed or improperly maintained structural BMPs. With limited financial resources available to local governments charged with implementation of the NPDES stormwater program, these approaches cannot always be easily accomplished.

It should also be noted that many NAFSMA members have constructed or required construction of stormwater detention facilities for the sole purpose of flood reduction. While no formal inquiry has been made, it can be said that in general there have not been many concerns expressed about mosquito problems in these facilities over the years. This is an anecdotal observation, however, and further study is needed.

At the onset, we need to recognize a need for additional research and information and request that funds be made available to better develop information on this topic and to identify technologies that could best mitigate the problems associated with vector breeding in stormwater management facilities. Adequate research needs to be done to assess the extent of West Nile Virus and other vector borne diseases and the relationship of structural stormwater BMPs as a contributor to the problem when compared to other potential sources of their breeding.

Some of the current BMPs serve as breeding sites of vectors, but it is also likely that many sites are not associated with this problem. At the same time, there are a variety of other features in urban areas that also act as vector breeding grounds, such as over-irrigated turf areas that stay soaked for extended periods of time, city park lakes and ponds, birdbaths in residential back yards, shallow wetland areas (bogs) that were preserved as a result of wetland protection regulations, and other sites that can contain shallow waters for extended periods of time.

Wetland mitigation and creation activities by NAFSMA members, many of them being done in response to the requirements of state and federal laws and regulations as a condition to provide stormwater management and flood protection facilities, can also contribute towards the creation of mosquito habitat as well. Before we know how much stormwater BMPs and flood protection projects contribute to vector populations, it will be necessary to evaluate all potential sources of vectors in urban areas and put them in proper context as to their relative magnitude and importance. At the same time, we need to develop more robust design technologies for BMPs and then educate our design professionals to have them design BMPs that eliminate or limit the breeding potential of vectors.

It is importance to note, however, that it takes more than design for effective vector control. Maintenance is critical and in some cases, environmental restrictions, the 404 regulatory permit program and Endangered Species Act issues inhibit the maintenance of these facilities to provide function as originally designed and intended. Thus, some relief from such restrictions on maintenance activities when faced with the prospect of a vector control issue will be needed.

To date, there have been a number of studies in this area that should be considered and serve as building blocks for additional research in this area.

A Preliminary Assessment of Vectors Associated with Stormwater Management Structures in the United States – A Nationwide Vector Control Perspective, June 2001, California Department of Health Services, Vector-Borne Disease Section.”

Control of Mosquito Breeding in Permitted Stormwater Systems, Submitted to Southwest Florida Water Management District, Brooksville, FL, July 22, 1994. Investigators: Frederick J. Santana, John R. Wood, Ray E. Parsons and Sally K. Chamberlain, Sarasota County Mosquito Control District, 5531 Pinkney Avenue, Sarasota, FL, 34233, (813) 951-5556.

A preliminary survey for mosquito breeding in stormwater retention ponds in three Maryland counties. Mosquito Control, Maryland Department of Agriculture, College Park, Dorothy, J.M., and K. Staker, 1990.

Representing mostly urban flood and stormwater management agencies, we appreciate the committee’s focus on this issue but offer that certainly other sources for mosquito borne diseases exist in the urban environment that must also be addressed to appreciate the total problem that we are facing.

NAFSMA staff and leadership have discussed the issue of mosquito control and its relationship to structural stormwater BMPs in detail and offer the following points to consider in any national discussion of this issue:

Vector control, stormwater management and local and state health agencies must work together to address this problem at the national, state and local levels

This type of cooperation must start at the top. The Environmental Protection Agency’s Office of Water and Office of Prevention, Pesticides and Toxic Substances Office must also be working closely together to address this issue from a national perspective. In addition, EPA needs to be working closely with the Center for Disease Control to jointly develop approaches to the problem.

A nationwide research effort is needed to help municipalities develop BMP designs and maintenance practices that will minimize mosquito breeding, regardless of what part of the United States these practices are employed.

Regional differences and flexibility must be built into these efforts from the onset.

Design and maintenance of structural BMPs must address vector control issues

Regulatory programs need to be adjusted to facilitate the maintenance of BMPs for control of vector populations

Public Education Is Critical – The public needs to be alerted to the accurate nature and extent of the problem, as well as actions they need to do to address standing water on their own property. The public also needs to be educated on the real danger of mosquito borne diseases.

Accurate and informative education efforts on this issue must be launched at the federal, as well as the local levels.

Communities must be aware of the kinds of actions residents need to undertake to reduce or eliminate the problems in their own yards.

The actual extent of the problem linked with stormwater management approaches needs to be assessed

In the meantime, NAFSMA members will continue to work with vector control agencies and state and local health agencies to monitor and minimize mosquito populations. Phase II of the federal NPDES stormwater program has the potential of significantly increasing the number of BMPs that may create mosquito and other vector-breeding habitats. The emphasis needs to be at this time on early action to find the root causes of these problems in BMPs and on finding possible means to better mitigate them through improved designs, appropriate maintenance and regulatory adjustments. The risks include increased public health problems and on having to go back and fix problems later at significant public burden and cost.

Thank you for your time and consideration. Please contact NAFSMA Executive Director Susan Gilson at 202-218-4133 with any questions that you may have.